**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.-44. (Cancelled)

45. (New):

A method for synchronizing a local clock generating circuit for a first of a plurality of components of a distributed system, the method comprising:

maintaining a locked state when a predefined number of local clock cycles generated by the local clock generating circuit is observed between successive occurrences of a global synchronization signal provided to each of the plurality of components of the distributed system;

entering a short state from the locked state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the short state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering an alarm state from the short state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering a long state from the locked state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the long state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal; and

entering the alarm state from the long state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

46. (New):

The method of claim 45 further comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state.

47. (New):

The method of claim 45 further comprising generating local control signals for the first of the plurality of components at time instants corresponding to the predefined number of local clock cycles.

48. (New):

The method of claim 45 further comprising entering the alarm state from the locked state when two more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal and entering the alarm state from

the locked state when two less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

49. (New):

The method of claim 48 further comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state from the alarm state.

50. (New):

The method of claim 48 further comprising suspending generation of local control signals for the first of the plurality of components when in the alarm state.

51. (New):

A local clock generating circuit for a first of a plurality of components of a distributed system, the local clock generating circuit comprising a state machine to perform operations comprising:

maintaining a locked state when a predefined number of local clock cycles generated by the local clock generating circuit is observed between successive occurrences of a global synchronization signal provided to each of the plurality of components of the distributed system;

entering a short state from the locked state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the short state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering an alarm state from the short state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering a long state from the locked state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the long state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal; and

entering the alarm state from the long state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

52. (New):

The local clock generating circuit of claim 51 wherein the state machine is further to perform operations comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state.

53. (New):

The local clock generating circuit of claim 51 further comprising a local control signal generator coupled to the state machine that generates local control signals at time instants corresponding to the predefined number of local clock cycles.

54. (New):

The local clock generating circuit of claim 51 wherein the state machine is further to perform operations comprising entering the alarm state from the locked state when two more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal and entering the alarm state from the locked state when two less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

55. (New):

The local clock generating circuit of claim 54 wherein the state machine is further to perform operations comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state from the alarm state.

56. (New):

The local clock generating circuit of claim 54 wherein the local control signal generator suspends generation of local control signals for the first of the plurality of components when the state machine is in the alarm state.

57. (New):

A computer readable medium containing executable instructions which, when executed in a processing system, causes the processing system to perform a method comprising:

maintaining a locked state when a predefined number of local clock cycles generated by the local clock generating circuit is observed between successive occurrences of a global synchronization signal provided to each of the plurality of components of the distributed system;

entering a short state from the locked state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the short state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering an alarm state from the short state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering a long state from the locked state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the long state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal; and

entering the alarm state from the long state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

58. (New):

The computer readable medium of claim 57 causes the processing system to perform a method further comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state.

59. (New):

The computer readable medium of claim 57 further comprising generating local control signals for the first of the plurality of components at time instants corresponding to the predefined number of local clock cycles.

60. (New):

The computer readable medium of claim 57 further comprising entering the alarm state from the locked state when two more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal and entering the alarm state from the locked state when two less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

61. (New):

The computer readable medium of claim 60 further comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state from the alarm state.

62. (New):

The computer readable medium of claim 60 further comprising suspending generation of local control signals for the first of the plurality of components when in the alarm state.

63. (New):

A local clock generating circuit for a first of a plurality of components of a distributed system, the local clock generating circuit comprising:

means for maintaining a locked state when a predefined number of local clock cycles generated by the local clock generating circuit is observed between successive occurrences of a global synchronization signal provided to each of the plurality of components of the distributed system;

means for entering a short state from the locked state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

means for entering the locked state from the short state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

means for entering an alarm state from the short state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

means for entering a long state from the locked state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

means for entering the locked state from the long state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal; and

means for entering the alarm state from the long state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

64. (New):

The local clock generating circuit of claim 63 further comprising means for observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state.

65. (New):

The local clock generating circuit of claim 63 further comprising means for generating local control signals for the first of the plurality of components at time instants corresponding to the predefined number of local clock cycles.

66. (New):

The local clock generating circuit of claim 63 further comprising means for entering the alarm state from the locked state when two more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal and means for entering the alarm state from the locked state when two less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

67. (New):

The local clock generating circuit of claim 66 further comprising means for observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state from the alarm state.

68. (New):

The local clock generating circuit of claim 66 further comprising means for suspending generation of local control signals for the first of the plurality of components when in the alarm state.

69. (New):

A distributed system having a plurality of components in which each of the plurality of components includes a local clock generating circuit with a state machine to perform operations comprising:

maintaining a locked state when a predefined number of local clock cycles generated by the local clock generating circuit is observed between successive occurrences of a global synchronization signal provided to each of the plurality of components of the distributed system;

entering a short state from the locked state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the short state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering an alarm state from the short state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering a long state from the locked state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal;

entering the locked state from the long state when one less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal; and

entering the alarm state from the long state when one more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

70. (New):

The distributed system of claim 69 wherein the state machine is further to perform operations comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state.

71. (New):

The distributed system of claim 69 further comprising a local control signal generator coupled to the state machine that generates local control signals at time instants corresponding to the predefined number of local clock cycles.

72. (New):

The distributed system of claim 69 wherein the state machine is further to perform operations comprising entering the alarm state from the locked state when two more than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal and entering the alarm state from the locked state when two less than the predefined number of local clock cycles is observed between successive occurrences of the global synchronization signal.

73. (New):

The distributed system of claim 72 wherein the state machine is further to perform operations comprising observing the predefined number of local clock cycles between a second predefined number of successive occurrences of the global synchronization signal and then entering the locked state from the alarm state.

74. (New):

The distributed system of claim 72 wherein the local control signal generator suspends generation of local control signals for the first of the plurality of components when the state machine is in the alarm state.